

1. Simplify:
(a) $3a + 2a - a$ (b) $-7p - 2p + 6p$ (c) $u + 7u - 5w$
(d) $8a^3 - 5a^2 + 3a^3 - 4a^3$ (e) $9x - 3 + 12 - 4x$
2. Expand each of the following and collect the like terms:
(a) $3(a + 5) + 2(a + 3)$ (b) $2y(y + 3) + 5(4 - y)$
(c) $k(2 - k) - k(5 + k)$ (d) $4(m - 2) - 3(m - 4)$
3. Factorise each of the following:
(a) $2y + 8$ (b) $5a - 15ab$ (c) $3x^2 - 12x$
4. (a) Find 75% of 3 500kg
(b) Find 2% of \$21
(c) Write 1.625 as a percentage
(d) Write 15% as a fraction in its simplest form
(e) Change 0.55 to a percentage
5. (a) A savings account pays 4% interest each year. If Jake puts \$500 into his account, how much does he receive in interest after one year?
(b) Anne earns \$220 a week from her part-time job. If she was given a 15% pay rise, how much does she earn each week?
6. A bag has 7 yellow counters, 3 red counters and 4 blue counters. If one counter is selected at random, what is the probability of selecting:
(a) a yellow counter (b) a blue counter (c) a counter that is not red
7. (a) In a university college the ratio of men to women is 2 : 3. If there are 2000 students in the college, how many women are there?
(b) In an orchard the ratio of orange trees to lemon trees is 7 : 4. If there are 2 800 lemon trees, how many orange trees are there?
8. Solve:
(a) $x + 7 = 1$ (b) $a - 9 = 3$ (c) $-3a = 12$
(d) $\frac{x}{4} = 2$ (e) $8x + 5 = 37$ (f) $5a - 3 = 15$
9. Simplify each of the following ratios:
(a) 4 : 10 (b) 42 : 49 (c) 2kg : 800g (d) 10mm : 1m
10. If Debbie can run 400 metres in 66 seconds, calculate her speed in m/s, to 1 decimal place.